

REMARKS

In paper number 13, the Examiner communicated a number of rejections. Claims 1-10 and 17-25 were at issue. Claims 1-10 and 17-25 were rejected. The Examiner made the following rejections:

- (1) Claims 1 and 17 were rejected under 35 U.S.C. 112 (first paragraph).
- (3) Claims 1 and 17 were rejected under 35 U.S.C. 112 (second paragraph).

Applicants believe the present amendments and the following remarks traverse the Examiner's rejection of the claims. These remarks are presented in the same order as they appear above.

1. The Claims Are Enabled

The Examiner rejects claims 1 and 17 under 35 U.S.C. 112, first paragraph. Specifically the Examiner alleges that, "while being enabling for a method for the detection of multiple sclerosis (MS) using samples of brain tissue, [the specification] does not reasonably provide enablement for a method for the detection of altered distribution of protein sites using any other samples."¹ In their Office Action Response, mailed on November 13, 2001, the Applicants asserted the following propositions in rebuttal to the Examiner's rejection, under 35 U.S.C. 112, first paragraph, of these same claims.

- A. The Examiner failed to make a *prima facie* case regarding lack of enablement.
- and,
- B. The specification enables the claims as filed.

Applicants hereby reassert these arguments, captioned above, as articulated in their Response (mailed on November 13, 2001) in rebuttal to the Examiner's renewed rejection to

¹ Office Action, mailed March 1, 2002, page 2.

claims 1 and 17 under 35 U.S.C. § 112 (first paragraph). However, in order to direct claims to one embodiment, further business interests and without acquiescing to the Examiner's argument or waiving their right to prosecute the claims as filed (or claims similar thereto) in the future, Applicants have amended claims 1 and 17 (and canceled claims 2 and 18).

Specifically, the Applicants now recite the "detection of multiple sclerosis" in the preamble and now recite brain tissue as the specific tissue to be assayed in the methods as claimed. Applicants note the Examiner's comment that the present invention is enabled, ". . .for a method for the detection of multiple sclerosis (MS) using samples of brain tissue. . ."² Given that pending claims 1 and 17 now explicitly recite embodiments deemed as "enabled" by the Examiner, Applicants respectfully request the Examiner withdraw the pending rejections, under 35 U.S.C. § 112, to these same claims.

2. The Claims Are Definite

The Examiner rejects claims 1-10 and 17-25 under 35 U.S.C. 112, second paragraph. The Examiner alleges the application is "indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention."³ More specifically, the Examiner states that:

- A. "[A]ltered distribution of protein binding sites" is and ambiguous claim term.
and,
- B. Claims 2-9 and 18-25 are indefinite for being dependent from indefinite claims.

Once again, the Applicants reassert their arguments, as articulated in their Response (mailed on November 13, 2001), regarding the "definiteness" of the claims in rebuttal to the Examiner's renewed rejection to claims 1 and 17 under 35 U.S.C. § 112 (second paragraph). However, in order to direct claims to one embodiment, further business interests and without acquiescing to the Examiner's argument or waiving their right to prosecute the claims as filed (or claims similar thereto) in the future, Applicants have amended claims 1 and 17.

² *Id.*

³ *Id.* at page 4.

Specifically, Applicants have drafted claims to a method in terms of a comparison between the degree of iron protein binding in a normal (e.g. control) tissue sample and an experimental (e.g. suspected of having a demyelinating disease) tissue sample in methods for the detection of multiple sclerosis. Applicants note that support for a comparison between normal and experimental tissue is found in the application as filed. Specifically, the Examiner is directed to Examples 3 and 9 in addition to Figures 4, 5 and 6. Therefore, no new matter was introduced by way of these amendments to the claims.

Applicants respectfully request the Examiner withdraw the pending rejections, under 35 U.S.C. § 112 (second paragraph) to independent claims 1 and 17 (and claims dependent thereon).

CONCLUSION

The Applicants believe the arguments and claim amendments set forth above traverse the Examiner's rejections and, therefore, request that all grounds for rejection be withdrawn for the reasons set above. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, the Applicant encourages the Examiner to call the undersigned collect at 617.252.3353.

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Thomas W. Brown

Thomas W. Brown
Registration No. 50,002

MEDLEN & CARROLL, LLP
101 Howard Street, Suite 350
San Francisco, California 94105
617.252.3353



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APPENDIX I
MARKED-UP VERSION OF REWRITTEN CLAIMS
PURSUANT TO 37 CFR § 1.121 (c)(1)(ii)

The following rewritten claims were rewritten as follows:

1. A method for the detection of [the altered distributions of protein binding sites] multiple sclerosis comprising:
 - a) providing: i) a [tissue] first brain tissue sample from a human suspected of having a demyelinating disease, ii) a second brain tissue sample from a human free from the pathological manifestations of a demyelinating disease, and [ii)] iii) iron binding protein;
 - b) reacting, in vitro, said first and second brain tissue samples with said iron binding protein [in vitro]; and
 - c) [measuring the extent of binding of said iron binding protein to said tissue sample, under conditions such that altered distributions of iron binding protein sites are detectable] comparing the degree of binding of said iron binding protein with said first and second brain tissue samples under conditions such that said second brain tissue sample is evaluated for anatomical changes consistent with a diagnosis of multiple sclerosis.
3. The method of Claim [2] 1, wherein said brain tissue is collected *via* surgical biopsy.
17. A method for the detection of [the altered distributions of protein binding sites] multiple sclerosis comprising:
 - a) providing: i) a [tissue] first brain tissue sample from a human suspected of having a demyelinating disease, ii) a second brain tissue sample from a human free from the pathological manifestations of a demyelinating disease, and [ii)] iii) iron binding protein wherein said iron binding protein is linked to a detectable marker;
 - b) reacting, in vitro, said first and second brain tissue samples with said iron binding protein [in vitro]; and

- c) [measuring the extent of binding of said iron binding protein to said tissue sample, under conditions such that altered distributions of iron binding protein sites are detectable] comparing the degree of binding of said iron binding protein with said first and second brain tissue samples under conditions such that said second brain tissue sample is evaluated for anatomical changes consistent with a diagnosis of multiple sclerosis.

19. The method of Claim [18] 17, wherein said brain tissue is collected *via* surgical biopsy.



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APPENDIX II
CLEAN VERSION OF THE ENTIRE SET OF PENDING CLAIMS
PURSUANT TO 37 CFR § 1.121 (c)(3)

1. A method for the detection of multiple sclerosis comprising:
 - a) providing: i) a first brain tissue sample from a human suspected of having a demyelinating disease, ii) a second brain tissue sample from a human free from the pathological manifestations of a demyelinating disease, and iii) iron binding protein;
 - b) reacting, in vitro, said first and second brain tissue samples with said iron binding protein; and
 - c) comparing the degree of binding of said iron binding protein with said first and second brain tissue samples under conditions such that said second brain tissue sample is evaluated for anatomical changes consistent with a diagnosis of multiple sclerosis.
3. The method of Claim 1, wherein said brain tissue is collected *via* surgical biopsy.
4. The method of Claim 1, wherein said iron binding protein is ferritin.
5. The method of Claim 4, wherein said ferritin is native.
6. The method of Claim 4, wherein said ferritin is recombinant.
7. The method of Claim 4, wherein said ferritin is linked to a detectable marker.
8. The method of Claim 7, wherein said marker is selected from the group consisting of radioisotope and fluorescent dye.
9. The method of Claim 8, wherein said radioisotope is ¹²⁵I.

10. The method of Claim 1, wherein said measuring is performed with a technique selected from the group of autoradiography and immunofluorescence.

17. A method for the detection of multiple sclerosis comprising:

- a) providing: i) a first brain tissue sample from a human suspected of having a demyelinating disease, ii) a second brain tissue sample from a human free from the pathological manifestations of a demyelinating disease, and iii) iron binding protein wherein said iron binding protein is linked to a detectable marker;
- b) reacting, in vitro, said first and second brain tissue samples with said iron binding protein; and
- c) comparing the degree of binding of said iron binding protein with said first and second brain tissue samples under conditions such that said second brain tissue sample is evaluated for anatomical changes consistent with a diagnosis of multiple sclerosis.

19. The method of Claim 17, wherein said brain tissue is collected *via* surgical biopsy.

20. The method of Claim 17, wherein said iron binding protein is ferritin.

21. The method of Claim 20, wherein said ferritin is native.

22. The method of Claim 20, wherein said ferritin is recombinant.

23. The method of Claim 17, wherein said marker is selected from the group consisting of radioisotope and florescent dye.

24. The method of Claim 23, wherein said radioisotope is ¹²⁵I.

25. The method of Claim 17, wherein said measuring is performed with a technique selected from the group of autoradiography and immunofluorescence.